

**REMARKS**

Claim 26 is pending in this application. By this Amendment, claims 16 and 19-23 are cancelled and claim 26 is added. Support for the amendment to claim 16 can be found, for example, at P4/L6-18 of the instant specification and in original claim 22. No new matter is added. In view of the foregoing amendments and following remarks, reconsideration and allowance are respectfully requested.

**Rejection Under 35 U.S.C. §102**

The Office Action rejects claims 16, 19-21 and 23 under 35 U.S.C. §102(b) over Ebbesen, Thomas W., "Carbon Nanotubes: Preparation and Properties," CRC Press (1997) ("Ebbesen"). Claims 16, 19-21 and 23 are cancelled, rendering the rejection moot. Claim 26 is not anticipated by Ebbesen for the following reasons.

Claim 26 recites "[a] method for producing a nanonetwork, comprising: performing a modification treatment on multi-walled carbon nanotubes having at least two layers of graphene sheets, wherein: the modification treatment is conducted by performing a mechanochemical treatment and subsequently performing a heating treatment in an acid solvent; and the modification treatment modifies the carbon nanotubes to include core portions including hollow tubular portions surrounded by graphene sheets, and outer portions including modified graphene sheets having amorphous carbon areas formed around the core portions, the modified graphene sheets originating from at least one of the at least two layers of graphene sheets; and the modification treatment results in formation of a dispersion including a nanonetwork in which a plurality of the carbon nanotubes adhere to one another through the amorphous carbon areas; and applying the dispersion to a substrate to form a film including the nanonetwork" (emphasis added). Ebbesen does not teach or suggest such a method.

The Office Action asserts that Ebbesen discloses a method for purifying liquid phase carbon nanotubes that includes grinding a sample with a mortar and pestle, dispersing the sample in sulfuric acid and raising the temperature of the dispersion to about 150 °C. The Office Action further asserts that Ebbesen discloses that the purifying method causes the outer layers of the nanotubes to be oxidized, while the inner layers are unaffected. Notwithstanding these assertions, Ebbesen does not teach or suggest the method of claim 26.

Claim 26 recites a method for producing a nanonetwork wherein a modification treatment results in formation of a dispersion including a nanonetwork in which a plurality of the carbon nanotubes adhere to one another through the amorphous carbon areas and the dispersion is applied to a substrate to form a film including the nanonetwork. Ebbesen discloses a treatment by which carbon nanotubes are purified. See P156. A sample is pulverized, treated in an acidic solution of  $\text{KmnO}_4$ , and then filtered. See P156-158. Nowhere does Ebbesen teach or suggest that a dispersion including a nanonetwork is formed, much less that such dispersion is applied to a substrate to form a film including such a nanonetwork. As Ebbesen does not teach or suggest that a modification treatment results in formation of a dispersion including a nanonetwork and application of the dispersion to a substrate to form a film including the nanonetwork, Ebbesen does not teach or suggest each and every limitation of claim 26.

Claim 26 is not anticipated by and would not have been rendered obvious by Ebbesen. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Rejection Under 35 U.S.C. §102 or §103

The Office Action rejects claim 22 under 35 U.S.C. §102(b), or in the alternative under 35 U.S.C. §103(a), over Ebbesen in view of U.S. Patent Application Pub. No. 2003/0039604 to Niu et al. ("Niu"). Claim 22 is cancelled, rendering the rejection moot.

Claim 26 is not anticipated by, and would not have been rendered obvious by, Ebbesen and Niu for the following reasons.

As set forth above, Claim 16 recites "[a] method for producing a nanonetwork ... wherein ... the modification treatment results in formation of a dispersion including a nanonetwork in which a plurality of the carbon nanotubes adhere to one another through the amorphous carbon areas; and applying the dispersion to a substrate to form a film including the nanonetwork." (emphasis added). For the reasons set forth above, Ebbesen does not teach or suggest the method of claim 26. Niu does not cure the deficiencies of Ebbesen.

The Office Action relies on Niu for its teaching of carbon nanotubes that become self-adhering after oxidation, and the formation of hard, dense mats by dispersing, filtering and drying of oxidized nanotubes. However, Niu, like Ebbesen, does not disclose a method for producing a nanonetwork wherein a modification treatment results in formation of a dispersion including a nanonetwork in which a plurality of the carbon nanotubes adhere to one another through the amorphous carbon areas and the dispersion is applied to a substrate to form a film including the nanonetwork. Furthermore, in Niu, nanotubes are not purified by subjecting to mechanochemical treatment followed by a heating treatment in an acidic solvent, as in Ebbesen, and thus one of ordinary skill in the art would not have expected the nanotubes of Ebbesen to have the properties of nanotubes of Niu. As Ebbesen and Niu, either alone or in combination, fail to teach or suggest a modification treatment that results in formation of a dispersion including a nanonetwork and application of the dispersion to a substrate to form a film including the nanonetwork, Ebbesen and Niu do not teach or suggest each and every limitation of claim 26.

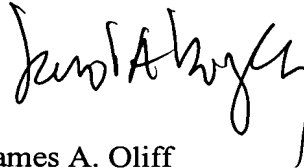
Claim 26 would not have been rendered obvious by Ebbesen and Niu. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 26 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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